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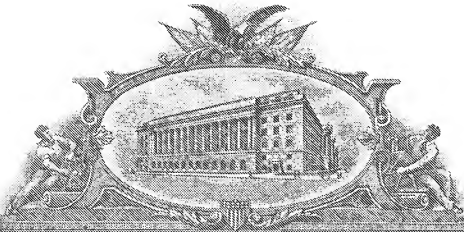
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APPLICATION NUMBER: 60/562,435

FILING DATE: April 15, 2004

RELATED PCT APPLICATION NUMBER: PCT/US05/12690



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Under Secretary of Commerce
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PROVISIONAL APPLICATION COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION under 37 C.F.R. 1.53 (b)(2).

Docket Number	1366US1	Type a plus sign (+) inside this box →	X
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INVENTOR(s)/APPLICANT(s)			
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TITLE OF THE INVENTION

Automatic Dose Size Selection for Multi-Component Fluid Proportioners

CORRESPONDENCE ADDRESS

Graco Minnesota Inc.
P. O. Box 1441
Minneapolis

STATE	Minnesota	ZIPCODE	55440-1441	COUNTRY	U.S.A.
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ENCLOSED APPLICATION PARTS (check all that apply)

<input checked="" type="checkbox"/>	Specification	Number of Pages 5	<input type="checkbox"/>	Small Entity Statement
<input checked="" type="checkbox"/>	Drawing(s)	Number of Sheets 1	<input type="checkbox"/>	Other (specify)

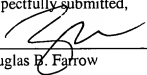
METHOD OF PAYMENT (check one)

<input type="checkbox"/>	A check or money order is enclosed to cover the Provisional filing fees	Provisional Filing Fee Amount (\$)	\$160.00
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The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

- ☒ No.
☐ Yes, the name of the U. S. Government agency and the Government contract number are:

Respectfully submitted,


 Douglas B. Farrow

Date: April 15, 2004
 Reg. No.: 28582

- ☐ Additional inventors are being named on separately numbered sheets attached hereto.

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**Fee Transmittal
for FY 2003**

Effective 01/01/2003. Patent Fees are subject to annual revision.

Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$160.00)

Complete if Known

Application Number	
Filing Date	
First Named Inventor	Stone
Examiner Name	
Art Unit	
Attorney Docket No.	1366US1

METHOD OF PAYMENT (check all that apply)
☐ Check ☐ Credit card ☐ Money order ☐ Other ☐ None
☒ Deposit Account:

Deposit	07-1775
Account	
Number	
Deposit	
Account	Graco Inc.
Name	

The Commissioner is authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☒ Credit any overpayments☐ Charge any additional fee(s) during the pendency of this application☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account**FEE CALCULATION****1. BASIC FILING FEE**

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1001	770	2001	385	Utility filing fee	
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	160.00
SUBTOTAL (1)				(\$)	160.00

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

Total Claims	Extra Claims	Fee from below	Fee Paid
Independent Claims	-20" =	X	=
Multiple Dependent	-3" =	X	=

Large Entity		Small Entity		Fee Description
Fee Code	Fee (\$)	Fee Code	Fee (\$)	
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple independent claim, if not paid
1204	86	2204	43	**Reissue independent claims over original patent
1205	18	2205	9	**Reissue claims in excess of 20 and over original patent
SUBTOTAL (2)				(\$)

** or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)**3. ADDITIONAL FEES**

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English Specification	
1612	2,520	1612	2,520	For filing a request or ex parte examination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	745	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or release)	
1502	480	2503	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1607	50	1607	50	Processing fee under 37 CFR 1.170(a)	
1606	180	1606	180	Submission of Information Disclosure Sheet	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	Filing a submission after final rejection (37 CFR 1.120(a))	
1810	770	2810	385	For each additional invention to be examined 37 CFR 1.128(b)(3)	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	
Other Fee (Specify)					

Other Fee (Specify)

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3)

SUBMITTED BY

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Date April 15, 2004

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket Number: 1366US1

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Title of Invention: Automatic Dose Size Selection for
Multi-Component Fluid Proportioners

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AUTOMATIC DOSE SIZE SELECTION FOR
MULTI-COMPONENT FLUID PROPORTIONERS

TECHNICAL FIELD

5 This application claims the benefit of US Application serial number _____
_____, filed _____.

BACKGROUND ART

 Devices for dispensing plural component materials have become increasingly
10 popular in recent years, as such materials have assumed more widespread usage in
 industry. As used herein, a catalyst (or first fluid) is mixed with a resin (or second fluid).
 While the terms catalyst and resin are used for purposes of convenience in reference, it is
 understood that other plural component systems may be utilized which might not normally
 utilize such terminology.

15 Also known are systems such as those sold under the PRECISION-MIX trademark
 by the assignee of the instant invention and generally described in European patent
 number 116879 and US patent no. 5,368,059, the contents of which are both hereby
 incorporated by reference. In such systems, the two fluids to be dispensed both have a
 flow meter and a valve associated with them. A fixed amount of the first fluid is dispensed
20 into a mixer and then a fixed amount of the second fluid is dispensed into the mixer,
 whereupon the process is repeated. Traditionally, electronic proportioners have required

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that the dose size either be fixed or entered by the user. Selecting the appropriate dose size has been dependent on factors such as flow rate, viscosity, and mix ratio. This invention allows for better overall mix performance and improved usability since there is no input from the user required.

5

DISCLOSURE OF THE INVENTION

In the method of the instant invention, after a selected number of doses have been dispensed, the system stops and calculates how many of those doses have fallen within a predetermined tolerance of the desired ratio between the two materials. If too many doses
10 fall outside the tolerance, the dose size is decreased. This process is repeated until the appropriate number of doses fall within the desired tolerance.

These and other objects and advantages of the invention will appear more fully from the following description made in conjunction with the accompanying drawings wherein like reference characters refer to the same or similar parts throughout the several
15 views.

BRIEF DESCRIPTION OF DRAWINGS

Figure 1 is a flow chart showing the dose selection method of the instant invention.

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BEST MODE FOR CARRYING OUT THE INVENTION

Figure 1 shows a flow chart detailing the instant invention. In the method of the instant invention, a selected number of doses are dispensed. The system then stops and calculates how many of those doses have fallen within a predetermined tolerance (98% in the preferred embodiment) of the desired ratio (e.g. 2:1) between the two materials. If too many doses fall outside the tolerance, the dose size is decreased from the initial setting (50cc in the preferred embodiment). This process is repeated until the appropriate number of doses fall within the desired tolerance.

It is contemplated that various changes and modifications may be made to the method without departing from the spirit and scope of the invention as defined by the following claims.

CLAIMS

1. A method of setting dose size for a plural component sequential metering system for dispensing materials having at least first and second components and comprising the steps of:

5 dispensing a plurality of doses of plural component material;

measuring the ratio between said components in said plurality of doses;

determining the number of said plurality which fall within a predetermined

tolerance of the desired ratio; and

decreasing said dose size when the number of doses falling outside said

predetermined tolerance exceeds a predetermined level

ABSTRACT

The invention is for use with a plural component sequential metering system. In the method of the invention, after a selected number of doses have been dispensed, the system stops and calculates how many of those doses have fallen within a predetermined tolerance of the desired ratio between the two materials. If too many doses fall outside the tolerance, the dose size is decreased. This process is repeated until the appropriate number of doses fall within the desired tolerance.

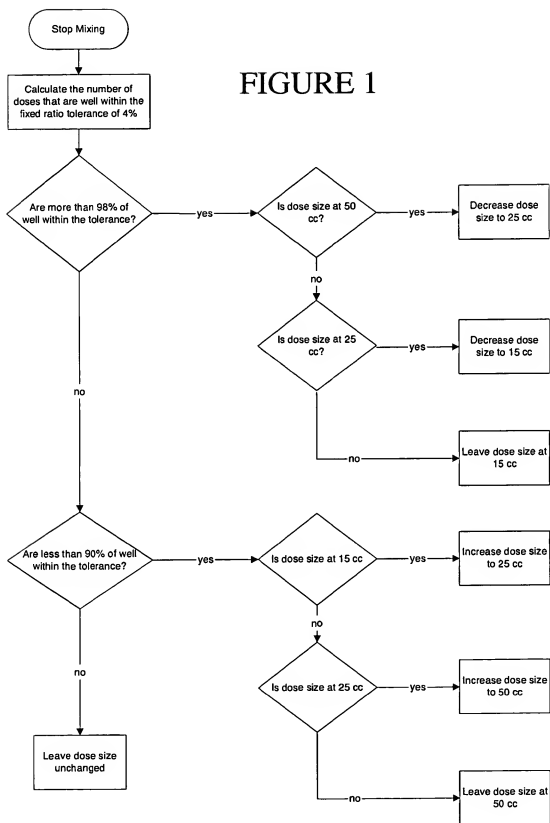


FIGURE 1